```
(FILE 'USPAT' ENTERED AT 13:53:07 ON 08 OCT 1999)
L1          1024 S REFERENCE (W) VOLTAGE (P) (WARN### OR ALARM) (P) COMPAR?
                 E METO/IN
                 E METTO/IN
                 E METO, ?/IN
L2           181 S L1 AND DETECT? (P) POWER (P) BATTERY
L3            14 S L2 AND CALCULAT### (P) VOLTAGE
L4             0 S L3 AND EXTERNAL? (3A) COMMUNICAT? (P) TERMINAL
L5             6 S L3 AND EXTERNAL
L6           318 S 713/300/CCLS
L7          2244 S L2 AND PERSONAL DIGITAL ASSISTANT OR PDA
L8             2 S L2 AND L7
L9             4 S L3 AND LOW (3A) POWER
L10            2 S L8 AND LOW
L11            1 S 4821338/PN
L12            1 S L10 AND L11
L13            3 S L1 AND EXTERNAL? (P) COMMUNICAT? (P) TERMINAL?
L14            1 S 4399200/PN
L15            1 S 4207567/PN
L16            1 S L13 AND L14
L17            1 S L13 AND
```

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L12            1 S L10 AND L11
L13            3 S L1 AND EXTERNAL? (P) COMMUNICAT? (P) TERMINAL?

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1. 5,159,272, Oct. 27, 1992, Monitoring device for electric storage battery and configuration therefor; Purushothama Rao, et al., 324/429; 320/136, DIG.21; 340/636; 429/93 [IMAGE AVAILABLE]

2. 4,399,200, Aug. 16, 1983, Device for controlling a pump in a storage battery; James H. Galloway, 429/23, 49, 63, 70, 81 [IMAGE AVAILABLE]

3. 4,207,567, Jun. 10, 1980, Broken, chipped and worn tool detector;

```
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L1          1024 S REFERENCE (W) VOLTAGE (P) (WARN### OR ALARM) (P) COMPAR?
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L4             0 S L3 AND EXTERNAL? (3A) COMMUNICAT? (P) TERMINAL
L5             6 S L3 AND EXTERNAL
L6           318 S 713/300/CCLS
L7          2244 S L2 AND PERSONAL DIGITAL ASSISTANT OR PDA
L8             2 S L2 AND L7

=> d 1-
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1. 5,714,932, Feb. 3, 1998, Radio frequency security system with direction and distance locator; Roberto J. Castellon, et al., 340/539, 571, 572.4, 573.4, 825.06; 342/417; 455/67.1 [IMAGE AVAILABLE]

2. 4,821,338, Apr. 11, 1989, Optical signal receiving apparatus with compensation for peripheral light; Kazuhiko Naruse, et al., 356/227;

US PAT NO: 5,714,932 [IMAGE AVAILABLE]

SUMMARY:

BSUM(22)

The . . . transmitters both include microprocessors and associated memory. Each portable transmitter is assigned a unique unit binary code. In order to **detect** destruction of the transmitter unit, a powerline is imbedded in an elongated band which is placed on the wrist of. . . the RF carrier signal with the unit code. The resulting FM signal is transmitted to the central control unit. When **power** is severed to the microprocessor, the RF transmitter in the portable transmitter continues emitting an RF carrier signal. The central. . . control unit, in addition to the microprocessor and memory, includes a keypad input device, an antenna system, an RF directional **detection** circuit, a threshold **detection** circuit, an identification circuit, distance measuring circuit, and several displays. One display shows the orientation or bearing as well as the distance between the central control unit and each portable transmitter unit. This is accomplished by the directional **detection** circuit generating phase differential signals which are analyzed by the microprocessor in order to determine the relative position and a distance measuring circuit which determines distance by the relative strength of the received RF signal. The threshold **detection** circuit determines when the received RF signal falls below a certain threshold. At that time, the threshold **detection** circuit issues an alarm which stops the scan cycle of the microprocessor through the list of stored unit codes in. . . which transmitter has left the security region (programmable up to 1,000 feet). The portable search and locate unit includes a **battery** which is recharged at the central control unit. The portable search and locate unit includes an RF directional **detection** circuit, a microprocessor, two displays (one showing bearing and distance and the second showing the scanned transmitter unit code), and. . .

DETDESC:

DETD(79)

The resulting signal at the FM detector output is **compared** in a threshold detector, with a **reference voltage** being given at one of the input detectors by the main microcontroller. This **reference voltage** has a determined value corresponding with the distance at which the transmitters are to be monitored. In other words, if. . . in the other input the signal of all transmitters being monitored appears one by one, so the signals can be **compared** to the voltage reference value. This will enable it to detect that a transmitter has left the range of the. . . received is less than the voltage reference value. The threshold detector provides an output voltage that is converted into an **alarm** signal for the equipment. This means that the threshold detector is in charge of determining the distance until past which. . .

DETDESC:

DETD(119)

As . . . may be used instead of the distributed amplifier. The distribution amplifier used in one embodiment of the invention is a **PDA** 10, 1 GHz amplified from Pico Macore, Inc. The output of this

amplifier is applied to all the mixers M. . .

DETDESC:

DETD(137)

FIG. 7 shows that the portable search and locate unit includes an antenna system 410 coupled to a radio frequency orientation **detection** circuit 412. The **detection** circuit is supplied with a voltage v. This voltage v is supplied from **battery** 414. The output of the RF orientation **detection** circuit 412 is applied to an orientation microprocessor 416. A main microprocessor 417 has an associated memory 418. The microprocessor 417 generates a scan control which is applied to the RF orientation **detection** circuit 412. Microprocessor 417 is also supplied **power** via **power** line 420. Microprocessor 417 obtains input from a keypad 421. Keypad 421 is I supplied voltage v. Microprocessor 417 also. . . represent an errant transmitter unit code. An "errant transmitter" is a transmitter that has left the security zone. The rechargeable **battery** 414 is charged via connector 415. Connector 415 in the portable search and locate unit is complementary to c

DETDESC:

DETD(10)

Reference . . . luminance of the object when the stroboscope unit 2 emits light, 30 represents a diode, in parallel, connected to a **calculation** amplifier 31 and forming a logarithmic compression circuit together with the **calculation** amplifier 31, 33 represents a transistor which is operated in accordance with an output of the logarithmic compression circuit, 32. . . to discharge charges stored in the light-adjusting capacitor 34 so as to reset the light-adjusting capacitor 34, 36 represents a **comparator** for subjecting **voltage** realized by the charges stored in the light-adjusting capacitor 34 (that is, collector **voltage** of the transistor 33) and the **reference voltage** of the **reference voltage** source 37 to a **comparison**, 40 represents an LED (Light Emitting Diode) serving as an **alarm** display unit, 39 represents a current limiting resistor for limiting the electric current to be supplied to the LED 40,. . .

DETDESC:

DETD(16)

Reference . . . the microcomputer 17 for the camera and controlling the circuit in the stroboscope unit 2. Reference numeral 49 represents a **battery** 49 to be mounted on the inside of the stroboscope unit 2. Reference numeral 50 represents a **power** switch disposed on the stroboscope unit 2, and 51 represents a DC-DC converter for generating an output, the level of which has been raised from that of the output **voltage** of the **battery** 49. Reference numeral 52 represents a counterflow-preventive diode, and 53 represents a main capacitor for storing charges for causing a light emission tube (a xenon light emission tube) 14 to be described later. Reference numerals 54 and 55 represent **voltage-detecting** division resistors for **detecting voltage** charged in the main capacitor 53. Reference numeral 57 represents a comparator for subjecting the charged **voltage detected** by the **voltage-detecting** division resistors 54 and 55 and the **voltage** of a reference **voltage** source 56 to a comparison. Reference numeral 59 represents an LED which is turned on by the output from the. . . interrupting light emission of the light emission tube 14. Reference numeral 63 represents a capacitor, in parallel, connected to a **calculation** amplifier 62 and forming an integral circuit together with the **calculation** amplifier 62. Reference numeral 64 represents an analog switch for short-circuiting the capacitor 63 when switched on in response to. . . microcomputer 68 to reset the integration circuit. Reference numeral 16 represents the photodiode (connected to an input terminal of the **calculation** amplifier 62) for **detecting** the quantity of light emitted from the light emission tube 14. Reference numeral 65 represents an A/D converter which A/D-converts the output from the integration circuit composed of the **calculation** amplifier 62 and the capacitor 63 so as to supply the converted value to the stroboscope-side microcomputer 68. Reference numeral. . .

DETDESC:

DETD(39)
(113): . . . 16 corresponding to the quantity of light emitted as the pre-light-emission are charged in the integrating capacitor 63. Since the **voltage** of the capacitor 63 appears in the output from the **calculation** amplifier 62, the output is received through the A/D converter 65.

DETDESC:

DETD(62)
(207): . . . the state of the port CCC.sub.-- IN is high, the operation is branched to step (208). The port CCC.sub.-- IN **detects** the state of charge of the main capacitor 53 of the stroboscope unit through the terminal 47 for the signal indicating completion of charging. After the **power** switch 50 has been switched on, the **battery** 49 is connected to the DC-DC converter 51 so that the DC-DC converter 51 generates voltage required to emit flash. . . capacitor 53 through the counterflow-preventive diode 52. Since no charge is charged into the main capacitor 53 immediately after the **power** switch 50 has been switched on, the voltages divided by the voltage-**detecting** division resistors 54 and 55 are lower than the voltage of the reference voltage source 56. Therefore, the level of the output from the comparator 57 for **detecting** the completion of charging is low and, therefore, the LED 59 for displaying the completion of charging has been turned off. As the time elapses, the DC-DC converter 51 continues charging of electric **power** to the main capacitor 53 so that the voltage of the main capacitor 53 is raised to a level which is sufficiently high to emit flash light. Since the resistance values of the voltage-**detecting** division resistors 54 and 55 and the voltage value of the reference voltage source 56 for **detecting** the completion of charging are set in such a manner that the voltages divided by the voltage-**detecting** division resistors 54 and 55 are higher than the reference voltage source 56 for **detecting** the completion of charging, the output from the comparator 57 for **detecting** the completion of charging is inverted to a high level. Therefore, an electric current flows into the LED 59 for. . .

DETDESC:

DETD(63)
(208): . . . which the duration of time for the shutter and the aperture value are changed in accordance with the brightness of **external** light may be employed.

DETDESC:

DETD(127)
(409): . . . The stroboscope-side microcomputer 68 receives command 03H from the microcomputer 17 for the camera to A/D-convert the output from the **calculation** amplifier 62. The stroboscope-side microcomputer 68 converts the **voltage** of the capacitor 63, which has been A/D-converted, into a guide number stored in register PGNR. Then, the mode is. . .

DETDESC:

DETD(163)

When . . . for measuring the quantity of emitted flash light are stored in the integrating capacitor 63. When the output from the **calculation** amplifier 62 has been made to be the same as the output from the D/A converter 67 for transmitting comparator **voltage**, the output from the comparator 66 is inverted. Thus, the levels of the AND gate 70 and OR gate 69. . .

DETDESC:

DETD(189)

(513): A requirement command of the stroboscope-side microcomputer 68 for completion of storage of main light emission. Since the **voltage** corresponding to charges stored in the integrating capacitor 63 realized due to an electric current generated in the photodiode 16 due to main light emission appears in the output from the **calculation** amplifier 62, it is A/D-converted in the A/D converter 65 and fetched.

DETDESC:

DETD(234)

(607). . . . of incidental light. Although the collector electric current in the transistor 33, which is operated with the output from the **calculation** amplifier 31, initially is large, it is reduced as the capacitor 34 is discharged. After the collector electric current has been lowered to a level lower than the output **voltage** from the reference **voltage** source 37, the level of the output from the comparator 36 is inverted from a low level to a high. . . quantity of emitted flash light by the integrating circuit. After the film has been exposed to light for the time **calculated** in step (608), the second blind of the shutter is moved, and then the operation proceeds to step (620).

DETDESC:

DETD(243)

The **calculation** amplifier 62 generates **voltage** which is in proportion to the quantity of light to be emitted from the stroboscope u

US PAT NO: **4,821,338** [IMAGE AVAILABLE] L12: 1 of 1

SUMMARY:

BSUM(10)

Therefore, . . . is relatively high, and in which it can be achieved in relatively long distance range when the intensity is relatively **low**.

DETDESC:

DETD(4)

As . . . optical signal receiving window 101 for receiving the optical signal transmitted from the transmitter shown in FIG. 3, an electric **power** switch 102, and a light emitting diode 103 for warning when a **battery** check circuit described below **detects** that the voltage of **power** source becomes under a predetermined voltage. The light receiving window 101 is provided with a pair of light receiving lens. . .

DETDESC:

DETD(8)

E is a **power** supply **battery** for the receiver 6. SW1 is a **power** supply switch for the receiver 6. When the **power** supply switch SW1 is closed, the light receiving elements PD1 and PD2 receive an infrared light signal from the transmitter. . . signal. The electric current (a) outputted from the light receiving elements PD1 and PD2 is inputted to the amplification and **detection** circuit 14 which amplifies, **detects**, and transmits the electric current (a) as data signal (b) to a data read circuit 16. The amplification and **detection** circuit 14 outputs a warning signal (c) when the intensity of peripheral light component which is incident on the light. . . from the transmitter 12 is higher than a predetermined value. The detailed description of the structure of the amplification and **detection** circuit 14 is made below with reference to FIG. 4.

DETDESC:

DETD(14)

The . . . connected to the resistor R1 in series and its connection point is connected to the non-inverting input terminal of a **comparator** CON1. A reference supply Vref1 which generates **reference voltage** is connected to the inverting input terminal of the **comparator** CON1. The output signal of the **comparator** CON1 is outputted as the above-described **warning** signal (c) and inputted to the base of a transistor Tr1 as well. The collector of the transistor Tr1 is. . . via the resistor R2. The transistor Tr1 is used as a switch and conductive when the signal outputted from the **comparator** CON1 is "H" and non-conductive when it is "L".

DETDESC:

DETD(15)

The . . . commercial frequency component with having frequency of 60 Hz.times.2 (or 50 Hz.times.2). Therefore, the impedance toward the inductance L1 is **low** and the impedance toward the capacitor C1 is high. As a result, the above-described photoelectric current flows toward the inductance. . . resistor R1. Voltage is generated across the resistor R1 according to the intensity of the photoelectric current. This voltage is **compared** with the **reference voltage** of the reference supply Vref1 by the **comparator** CON1. When the voltage across the resistor R1 is lower than the **reference voltage** Vref1, the intensity of peripheral light component is **low** and the quantity of the photoelectric current generated in the light receiving elements PD1 and PD2 are small. Thus, the output of the **comparator** CON1 is "L", so that the **warning** signal (c) is not given. Accordingly, the transistor Tr1 is non-conductive in this case and the quantity of the electric. . .

DETDESC:

DETD(16)

When . . . L1 has a high impedance relative to alternative current component, while the impedance of the capacitor C1 relative thereto is **low**. Accordingly, the alternative current component of the photoelectric current outputted from the light receiving elements PD1 and PD2, namely, the. . .

DETDESC:

DETD(17)

Contrarily, . . . large because the intensity of peripheral light is high and the voltage across the resistor R1 is larger than the **reference voltage** Vref1, the output of the **comparator** CON1 becomes "H" and the **warning** signal (c) is given and the light emitting diode VLED for indicating verify is lighted to **warn** users that signal transmission may be interfered by peripheral light. When the output of the **comparator** CON1 becomes "H", the transistor Tr1 becomes conductive and the detection circuit 34 is grounded via the resistors R2 and. . . from the detection circuit 34 to the ground terminal increases, so that the sensitivity of the detection circuit 34 becomes **low**. This eliminates the influence given by shot nose and fluorescent lamps. The above-described shot noise and the pulsed light from. . .

DETDESC:

DETD(19)

Following . . . component toward the capacitor C1 and the photoelectric current corresponding to the peripheral light component toward the inductance L1. The **comparator** CON1 determines whether or not the intensity of peripheral light is higher than a predetermined value by **comparing** the voltage across the resistor R1 with the **reference voltage**. Since the inductance L1 has little direct current resistance, improved load characteristic is obtained by reducing the resistance of resistor. . . (b). Therefore, in a receiver of the embodiment, detection sensitivity is controlled, in accordance with a result determined by the **comparator** CON1, to prevent noise from being transmitted to the data read circuit 16. Further, if the receiver 6 receives peripheral light having a high intensity, an indication is made to **warn** users of it.

DETDESC:

DETD(21)

According to the above-described structure, when the intensity of peripheral light is too **low** to generate photoelectric current in small quantities, the output of the **comparator** CON1 is "H" and the transistor Tr2 is conductive. Therefore, when the amplification degree of the amplification 32 is determined. . . light component is high and the voltage of the photoelectric current corresponding to the peripheral light is higher than the **reference voltage**, the output from the **comparator** CON1 becomes "L", so that the transistor Tr2 becomes non-conductive. Consequently, the amplification degree of the amplifier 32 is determined only by the resistor R5; the amplification degree of the amplifier 32 is set to have **low** amplification degree. Thus, in this modification, when the intensity of peripheral light is **low**, noise is prevented from being transmitted to the data read circuit 16 as the data signal (b) by lowering the amplification degree of the amplifier 32. In this modified circuit, the output of the **comparator** CON1 is inputted to an inverter IV and the output of the inverter IV is used as the **warning** signal (c).

DETDESC:

DETD(23)

When the voltage across the resistor R1 according to the intensity of peripheral light component is very **low**, the outputs of the **comparators** CON1 and CON2 are "L" and the transistor Tr1 and Tr3 are non-conductive, so that the sensitivity of the detection. . . 34 becomes highest. When the voltage across the resistor R1 is a little higher than the above-described voltage, since the **reference voltage** of the reference supply Vref1 is lower than the **reference voltage** of the reference supply Vref2, the output of the **comparator** CON1 is "H" and only the transistor Tr1 is conductive, and the resistor R3 is connected in parallel to the. . . peripheral light is higher, and as a result, the voltage across the resistor R1 becomes higher, the outputs of both **comparators** CON1 and CON2 become "H" and the transistors Tr1 and Tr3 become conductive. As a result, the resistors R3 and. . . in this modification, the sensitivity of the detection circuit 34 can be changed at three steps. The output of the **comparator** CON2 is used as the **warning** signal (c) in this modification.

DETDESC:

DETD(26)

FIG. . . . the other input terminal of the OR circuit IC1. In this structure, if the intensity of peripheral light component is **low**, the output of the comparator CON1 is "L". Therefore, the signal outputted from the wave-shaping circuit 36 is inputed to. . .

DETDESC:

DETD(28)

The operation of the **battery** check system shown in FIG. 3 is described with reference to the time chart shown in FIG. 10. In FIG. 10, (1) shows the operation at the time when the voltage of the **power** supply **battery** E is high enough. When the **power** supply switch SW1 is closed at time t0, the timer circuit 18 gives the timer signal (e) of "H" and. . . signal (e) in the time period T1, and then stops giving the timer signal (e) at time t1. When the **power** supply switch SW1 is closed, the signal (f) is started to be generated from the oscillator 20. In this case, the warning signal (c) and the verify signal (d) are not given by the amplification and **detection** circuit 14 and by the data read circuit 16, respectively, and both outputs keep "L". The signal (f) outputted from the oscillator 20 makes the output **power** from the OR1

circuit "H". Accordingly, It is in the predetermined time period .tau..sub.0 after the output of the timer. . .

DETDESC:

DETD(46)

Commonly, . . . rays which passes with having an angle .alpha. relative to the optical axis can be received by the element chip **PDa** on its entire face thereof as shown in FIG. 11 (a). The relative sensitivity of the light receiving elements PD1. . . this condition, only light rays which pass virtually parallel with the optical axis can be received by the element chip **PDa** on the entire face thereof. Light rays which make more than .beta. with the optical axis cannot reach the element chip **PDa**. The relative sensitivity of the light receiving elements PD1 and PD2 in this case is shown by the narrow curve. . .

DETDESC:

DETD(49)

Of . . . window 106. Here the wall 6c is painted black. Thus the user of the transmitter observes the wall 6c of **low** reflectance by the reflection of the outer surface 106a. Therefore, it is possible that the brightness is **low** on the surface of the signal reception indicating window 106. This structure has the same effect on the faces 106b. . .

DETDESC:

DETD(53)

FIG. . . . either the light receiving elements PD1 or PD2 according to temperature thereof. In FIG. 16, the voltage Vcc from the **power** supply **battery** E is connected to analog switches SW2 and SW3 connected in series to the the cathodes of the light receiving elements PD1 and PD2, respectively. The inversion input terminal of a comparator CON3 is connected to a temperature **detecting** circuit TD which outputs voltage proportional to a **detected** temperature. The non-inversion input terminal of a comparator CON3 is connected to the reference **power** supply voltage Vref4. The output of the comparator CON3 is connected to the gate of the analog switch SW2 as. . . light receiving elements PD1 and PD2 are connected with each other as the output signal (a) to the amplification and **detection** circuit 14 shown in FIG. 3. The spectral sensitivity characteristic of the light receiving elements PD1 and PD2 are shown. . .

DETDESC:

DETD(54)

The . . . spectral sensitivity and the same spectral sensitivity characteristic as the spectral light emitting characteristic of a light emitting diode at **low** temperatures, the spectral sensitivity of the light emitting diode changes with the rise of temperature as described above. As a. . . spectral sensitivities are mounted on the apparatus. That is, the output of the light receiving element PD1 is used at **low** temperatures, while the output of light receiving element PD2 is used at high temperatures, thereby operating the apparatus at a high S/N ratio both at **low** and high temperatures.

DETDESC:

DETD(55)

The . . . detecting circuit TD used in this embodiment detects a

temperature and outputs voltage in proportion to temperature. That is, at **low** temperatures, the voltage outputted from the temperature detecting circuit TD is **low**, while at high temperatures, the voltage outputted therefrom is high. When the voltage outputted from the temperature detecting circuit TD is lower than that the voltage of the reference power supply Vref4 i.e., at **low** temperatures, the output from the comparator CON3 becomes "H". Thereafter, the signal of "H" is transmitted into the gate of. . .

DETDESC:

DETD(57)

By . . . the light receiving element PD1 having the spectral sensitivity similar to the emission characteristic of a light emitting diode at **low** temperatures is adopted, while at high temperatures, the output from the light receiving element PD2 having the spectral sensitivity similar. . . the light receiving element can be coincident with the spectral light emitting characteristic of the light emitting diode both at **low** and high temperatures, thereby improving S/N ratio.

DETDESC:

DETD(60)

In . . . voltage proportional to the temperature transmitted from the temperature detecting circuit TD and when the voltage is small i.e., at **low** temperatures, the selection circuit CS makes only the OUT1 become "H". At this point, the signals of the outputs OUT2. . .

DETDESC:

DETD(61)

A . . . with regard to the embodiment shown in FIG. 16. When the temperature detected by the temperature detecting circuit TD is **low**, only the signal outputted from the comparison selection circuit CS becomes "H", which makes the analog switch SW2 conductive, and,. . .

CLAIMS:

CLMS(10)

10. . . .
extended towards the outside for facing to the outer surface of the wavelength selecting member, said inner wall having relatively **low** reflectance.

CLAIMS:

CLMS(19)

19. The optical signal receiving apparatus as claimed in claim 18, wherein the voltage **detecting** means includes means for **detecting** the electric load loaded to the apparatus to produce **battery** check signals each time when the **detected** load is over a predetermined load level; and means for **detecting** voltage of the electric **power** supplying means in response to the **battery** check signal.

CLAIMS:

CLMS(20)

20. The optical signal receiving apparatus as claimed in claim 18, wherein the voltage **detecting** means includes means for producing

battery check signals at a predetermined period; and means for **detecting** voltage of the electric **power** supplying means in response to the check signal.

CLAIMS:

CLMS(21)

21. The optical signal receiving apparatus as claimed in claim 18, wherein the voltage **detecting** means includes means for **detecting** the electric load loaded to the apparatus to produce a first **battery** check signals each time when the **detected** load is over a predetermined load level; means for producing second **battery** check signals at a predetermined period; and means for **detecting** voltage of the electric **power** supplying means in response to both of the first and second **battery** check signals.

CLAIMS:

CLMS(23)

23. . . .
extended towards the outside for facing to the outer surface of the wavelength selecting member, said inner wall having relatively **low**

DETDESC:

DETD(37)

When the audible **alarm** is not activated, tone generator 136 provides an input to **comparator** 138. The non-inverting input of **comparator** 138 is set to a **reference voltage** by resistors 140 and 142. This voltage is approximately the voltage that is generated by the transducer element 136 when receiving the sound of a car engine running. If the engine is running, the inverting input of **comparator** 138 has a voltage level thereon which exceeds the reference level on the non-inverting input. The voltage of transducer element 136 is applied to the inverting input of **comparator** 138 via resistors 144 and 146. Conversely, if the engine is stopped, the voltage on the inverting input of camparator 138 is less than the **reference voltage** established on the non-inverting input. The output of **comparator** 138 is also connected to a pull-up resistor 148 to provide for a sharp transition of the **comparator** output.

DETDESC:

DETD(50)

Inasmuch . . . of the battery 200. This configuration is particularly suitable for many industrial applications. Also, the monitoring device 10 can **electrically communicate** with a battery via wire extensions from the **terminals**, permitting the monitoring device to be carried

US PAT NO: **4,399,200** [IMAGE AVAILABLE] L16: 1 of 1

DETDESC:

DETD(18)

Referring . . . 120. This causes conduction of transistor 580. Current flow in relay coil 582 closes switches 582a, 582b. This supplies the **external** voltage in line 124 from an auxiliary battery to a voltage divider including resistors 590, 592. This D.C. voltage is. . . of producing a 24.0 volts D.C. voltage in line 204. In FIG. 10D, there is also illustrated, somewhat schematically, a **terminal** strip 600 which is used in the preferred embodiment to produce output **communication** with the data bus 110.

DETDESC:

DETD(20)

Referring . . . by fixed patterns stored in MAPs 106 in accordance with standard control practice. This information is used to create a **reference voltage** for **comparitor** 340 through current supplied to line 160. During monitoring, the reference is updated as indicated by the flow chart in. . . this happens, a sub-routine is processed to indicate difficulty, if the battery is not being charged. Indeed, after producing an **alarm** or light indication, the sub-routine could take o